Calendar No. 242

102D CONGRESS *1st Session*	SENATE	REPORT 102-163

HIGH-SPEED RAIL TRANSPORTATION ACT OF 1991

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

OF THE

SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 811

SEPTEMBER 27 (legislative day, SEPTEMBER 19), 1991.—Ordered to be printed

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SEPTEMBER 27 (legislative day, SEPTEMBER 19), 1991.—Ordered to be printed

Mr. HOLLINGS, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany S. 811]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 811) to require the Secretary of Transportation to lead and coordinate Federal efforts in the development of magnetic levitation transportation technology and foster implementation of magnetic levitation and other high-speed rail transportation systems, and for other purposes, having considered the same reports favorably thereon with an amendment in the nature of a substitute and recommends that the bill as amended do pass.

PURPOSE OF THE BILL

The bill, as reported, would authorize to be appropriated to the Secretary of Transportation (Secretary) $25 million for fiscal year (FY) 1992, $40 million for FY 1993, $50 million for FY 1994, $60 million for FY 1995, and $30 million for FY 1996 to support the research, development, design, and implementation of advanced high-speed rail technologies in the United States. The reported bill also would establish a High-Speed Ground Transportation Office within the Federal Railroad Administration (FRA).

BACKGROUND AND NEEDS

During the past 18 months, public and private sector interest and activity in magnetic levitation (maglev) and other high-speed rail technologies have increased dramatically. In May 1991, the State of Texas awarded a franchise, or construction of a high-speed rail system connecting Houston, Dallas, and San Antonio to a U.S.

consortium which intends to use advanced European wheel-on-rail train technology. In June 1991, the State of Florida awarded a similar franchise to an investor group proposing a 14-mile maglev demonstration system in central Florida. Other States, including Ohio, Pennsylvania, California, Nevada, and New York, have fostered private sector or joint public/private sector efforts to implement advanced high-speed rail technologies in specific corridors.

Complementing these technology implementation initiatives, the administration has established the National Maglev Initiative (NMI), an interagency working group chaired by the FRA and the U.S. Army Corps of Engineers (ACE). The objective of the NMI is to assess, by late 1992, the future potential of maglev technology in the United States and to recommend an appropriate Federal role in its development. For FY 1992, the administration has proposed a total of $15.5 million to the FRA and $8 million to ACE for the NMI and related high-speed rail programs.

This resurgence of interest and investment in high-speed ground transportation systems is encouraging and significant for an issue that is not new. In 1965, Congress enacted the High-Speed Ground Transportation Act (1965 Act), which resulted in the establishment of the Office of High-Speed Ground Transportation (OHSGT) under the Department of Commerce [the law predated the creation of the Department of Transportation (DOT) and which authorized research and development in this area. The objectives of that Act included advancing rail technology as rapidly as possible and exploring technologies for new modes of intercity ground transportation. The Northeast Corridor Metroliner demonstration project between New York and Washington, DC, was a principal outcome of this effort, in addition to research and development of new high-speed rail technologies including maglev. The OHSGT office was transferred to DOT in 1976 and subsequently merged into the FRA's Office of Research and Development.

During the 1960s and 1970s, the United States pioneered development of maglev technology, but only to the prototype scale-model stage. In 1975, U.S. efforts were abandoned due to a lack of Federal funding, and Federal attention to high-speed rail lapsed for more than a decade. The Rail Safety Improvement Act of 1988 (1988 Safety Act), Public Law 100–342, refocused Federal oversight of developing State and regional high-speed rail initiatives by clarifying the jurisdiction of DOT and the FRA over the safety components of high-speed rail (including maglev). That Act defined "railroad" (as used in the Federal Railroad Safety Act of 1970) to include all forms of nonhighway ground transportation running on rails or electromagnetic guideways, except for rapid transit operations within an urban area not connected to a general railroad system. The term "railroad" thus includes certain commuter and other short-haul rail passenger service and intercity high-speed ground transportation systems without regard to whether they use new or traditional technologies.

The Committee believes that the renewed interest in high-speed ground transportation reflects a growing appreciation for a predicted future increase in long-term intercity travel demand, as well as a concern over congestion associated with traditional air and highway modes in specific intercity corridors. Although the first high-

speed rail systems built and operated in the United States likely will use European technologies, the Committee believes these projects will serve successfully significant intercity travel demand and will help pave the way for future high-speed rail system development using American technologies. While different high-speed rail technologies and systems may be appropriate for unique intercity corridors in different parts of the country, there is a Federal responsibility to ensure that these various efforts are coordinated and integrated effectively into the national transportation system.

The Committee further recognizes that development of American-designed high-speed rail technologies, including advanced attractive and superconducting dynamic maglev systems, would provide jobs and stimulate economic growth and competitiveness, as well as provide a more energy-efficient transportation alternative. In this connection, Germany has provided for a $1 billion cumulative investment in its Transrapid maglev technology, which uses an electromagnetic attractive system of levitation and propulsion, and Japan already has spent $1 billion to develop a superconducting maglev of a different design. In addition, Japan has indicated its intent to invest an additional $3 billion in constructing a superconducting maglev test track located in the Yamanashi Prefecture, potentially to be incorporated into a revenue system between Tokyo and Osaka by the year 2000.

Given the pace of foreign investment in advanced maglev technologies, the Committee believes that a shared partnership between U.S. industry and government will boost the pace of domestic research and development in all high-speed rail technologies and move the United States more rapidly to the implementation stage for new, more advanced high-speed surface technologies. U.S. industry has shown growing interest in participating in the development of maglev and other high-speed rail system technologies, and the Federal Government should stimulate and encourage this interest.

Legislative History

On April 11, 1991, Senator Hollings introduced S. 811, the High-Speed Rail Transportation Act of 1991. The bill is cosponsored by Senators Exon, Bryan, Breaux, Reid, Mikulski, Simon, and Robb.

During the 101st Congress, the Committee held two hearings on maglev and other high-speed rail technologies. It also reported a similar measure, S. 2286, the Magnetic Levitation Transportation Act of 1990.

At its open executive session on July 30, 1991, the Committee considered an amendment in the nature of a substitute to the original text of S. 811. The bill, without objection, was ordered reported as amended.

Summary of Major Provisions

This legislation is intended to encourage research, development, design, and implementation of maglev and other high-speed rail technologies in the United States and to promote domestic manufacturing efforts in this area. By requiring DOT to review current high-speed rail initiatives and to develop a national policy, this leg-

islation also seeks to coordinate various regional, State, and private-sector high-speed rail initiatives to ensure their effective intermodal integration into the national transportation network.

As reported, S. 811 would:

1. require the Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the Administrator of the Environmental Protection Agency (EPA), the Assistant Secretary of the Army for Civil Works, and heads of other interested agencies, to lead and coordinate Federal efforts to develop maglev technologies and foster the implementation of maglev and other high-speed rail transportation systems;

2. require the Secretary to enter into cooperative research and development agreements and funding agreements with U.S. companies to conduct research to overcome technical and other barriers to the development and construction of high-speed rail transportation systems;

3. provide for the transfer of research and basic generic technologies to industry to promote the commercial high-speed rail industry within the United States;

4. provide up to 80 percent of the funding for any cooperative research agreement or funding agreement entered into with industry;

5. require the Secretary to report to Congress on the research and development transfer activities;

6. authorize funding levels of $25 million in FY 1992, $40 million for FY 1993, $50 million for FY 1994, $60 million for FY 1995, and $30 million for FY 1996 to carry out the provisions of the 1965 Act as amended by this legislation;

7. require the Secretary to submit to Congress, within 18 months of the date of enactment of the legislation, a study of the commercial feasibility of constructing one or more high-speed rail transportation systems in the United States;

8. require the Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the Administrator of EPA, and the Assistant Secretary of the Army for Civil Works, to develop detailed designs for high-speed rail system technological concepts which have potential for successful application in the United States, and potential for significant participation by U.S. industries in the development and manufacture of such technologies;

9. require the Secretary to submit by 1996 a report to Congress which identifies which detailed designs, if any, warrant development as a full-scale prototype;

10. require the Secretary to establish a National High-Speed Rail Transportation Policy to promote the design, construction, and operation of high-speed rail transportation systems in the United States; and

11. establish a High-Speed Ground Transportation Office within the FRA to coordinate Federal activities related to high-speed rail research, development, demonstration, and implementation, and make recommendations for appropriate legislative and administrative action.

Estimated Costs

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. Congress,
Congressional Budget Office,
Washington, DC, August 12, 1991.

Hon. Ernest F. Hollings,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has prepared the attached cost estimate for S. 811, the High-Speed Rail Transportation Act of 1991. Enactment of S. 811 would not affect direct spending or receipts. Therefore, pay-as-you-go procedures would not apply to the bill.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

James L. Blum
(for Robert D. Reischauer).

Congressional Budget Office—Cost Estimate

1. Bill number: S. 811.
2. Bill title: The High-Speed Rail Transportation Act of 1991.
3. Bill status: As ordered reported by the Senate Committee on Commerce, Science and Transportation, July 30, 1991.
4. Bill purpose: S. 811 would authorize appropriations totalling $205 million over the 1992–1996 period for the Department of Transportation to carry out a program to develop high speed rail technologies. These funds would be available for research and development activities and for technology demonstration and implementation.

To carry out this program, S. 811 would require the Department of Transportation to:

Study the commercial feasibility of constructing one or more high-speed rail systems in the United States, and report to the Congress;

Develop detailed designs for high-speed rail system concepts;

Establish a national high-speed rail transportation policy; and

Establish a high-speed ground transportation office within the Federal Railroad Administration.

5. Estimated cost to the Federal Government:

[By fiscal year, in millions of dollars]

	1992	1993	1994	1995	1996
Authorization level	25	40	50	60	30
Estimate outlays	8	20	35	48	46

The costs of this bill fall within budget function 400.

Basis of estimate: CBO assumed that the full amounts authorized would be appropriated prior to the start of each fiscal year. Outlays are based on historical spending patterns for similar programs.

6. Pay-as-you-go considerations: The Budget Enforcement Act of 1990 sets up pay-as-you-go procedures for legislation affecting direct spending or receipts through 1995. CBO estimates that enactment of S. 811 would not affect direct spending or receipts. Therefore, pay-as-you-go procedures would not apply to the bill.

7. Estimated cost to State and local governments: None.

8. Estimate comparison: None.

9. Previous CBO estimate: None.

10. Estimate prepared by: Marjorie Miller.

11. Estimate approved by: C.G. Nuckols, for James L. Blum, Assistant Director for Budget Analysis.

Regulatory Impact Statement

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported.

NUMBER OF PERSONS COVERED

This legislation would provide an authorization of appropriations for FY 1992 through 1996 to the Secretary to conduct a commercial feasibility study and to establish a high-speed rail cooperative funding program with industry. The number of individuals potentially affected by this legislation is difficult to estimate since participation in the funding program by companies and organizations that choose to develop high-speed rail systems would be voluntary.

Ridership projections for any high-speed rail systems that would be constructed as a result of this legislation are speculative at this time. However, previous studies conducted both by public and private sponsoring entities in selected intercity corridors have predicted significant ridership demand for specific proposed high-speed rail transportation systems.

ECONOMIC IMPACT

Section 5 of the reported bill would authorize appropriations of $25 million for FY 1992, $40 million for FY 1993, $50 million for FY 1994, $60 million for FY 1995, and $30 million for FY 1996 for the Secretary to establish a high-speed rail cooperative funding program and take other actions to carry out the 1965 Act as amended by this legislation. These funding levels would allow the Secretary to fund up to 80 percent of the cost of any project under an agreement authorized pursuant to this legislation. Not more than 40 percent of the funds for FY 1992, and 30 percent of the funds for each of the fiscal years thereafter, would be available for research and development. In addition, these appropriations would fund the high-speed rail commercial feasibility study to be conducted by the Secretary as mandated by this legislation. The Secretary would incur some additional costs in establishing a national high-speed rail transportation policy and reporting to Congress as required. The FRA also would incur some additional costs in estab-

lishing a High-Speed Ground Transportation Office and carrying out the functions specified under this legislation. However, these funding levels would be modest and are not expected to have an inflationary impact on the Nation's economy. In addition, by providing for such funds for the development of high-speed rail, the legislation will have a positive economic impact on the Nation's technology base and competitiveness.

PRIVACY

This legislation would not have any adverse impact on the personal privacy of the individuals affected.

PAPERWORK

The Committee does not foresee a significant increase in the current level of paperwork as a result of this legislation. However, some additional paperwork would be involved as the Secretary would be required to review proposals from industry groups seeking to enter into cooperative funding arrangements for high-speed rail development. Additionally, companies or groups planning to construct high-speed rail systems may be required to submit design and construction plans to the FRA in order to ensure conformity with applicable safety standards.

SECTION-BY-SECTION ANALYSIS

SECTION 1.—SHORT TITLE

This section provides that the legislation is to be entitled the "High-Speed Rail Transportation Act of 1991."

SECTION 2.—FINDINGS

This section recognizes that an efficient, integrated transportation network is an essential element in assuring the economic progress of the United States, and that the Nation's current transportation network faces increasing demands and limited capacity. Conventional ground and air transportation systems rely heavily on fossil fuels, which are in limited supply. High-speed rail transportation technologies offer an energy-efficient, environmentally sound way to supplement existing transportation modes, increase system capacity, and support economic growth.

The Committee finds further that cooperative research and development efforts among industry, the academic community, and government are necessary for the United States to regain a leadership role in the next generation of maglev technologies and for high-speed rail transportation to become a reality in the United States. Through the 1965 Act, DOT historically has been charged with promoting advanced transportation systems and has responsibility for the safety of newly emerging high-speed rail technologies pursuant to the 1988 Safety Act. The Committee believes that existing Federal efforts (including the NMI) must be strengthened for high-speed rail transportation to achieve its potential in the United States, and the Secretary should lead these efforts in consultation with ACE and other interested agencies.

SECTION 3.—RESEARCH AND DEVELOPMENT

This section would amend the 1965 Act to require the Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the EPA Administrator, the Assistant Secretary of the Army for Civil Works, and other heads of interested agencies, to lead and coordinate Federal efforts to develop maglev technologies and foster implementation of maglev and other high-speed rail transportation systems.

DOT originally pioneered high-speed rail technologies through the 1965 Act, funding broad research and development into all forms of high-speed ground transportation, including maglev. In recent years, DOT has funded feasibility studies by States considering maglev and other high-speed rail systems. The present NMI assessment program and preliminary safety oversight activities have heightened DOT's involvement with and awareness of the potential of new high-speed rail technologies.

Thus the Committee believes that DOT is best suited to coordinate Federal efforts in the development of new maglev technologies and foster implementation of maglev and other high-speed rail systems. Issues such as safety and intermodal system integration including access to highway rights-of-way and airport/aviation connections) can be addressed most appropriately within DOT.

Several other Federal agencies have participated in the assessment of the future potential for maglev systems, including principally the Department of Energy, ACE, the Department of Commerce, and EPA. The national laboratories, including the Brookhaven and Argonne National Laboratories, also have been involved in maglev through the NMI. The Committee directs the Secretary to coordinate and cultivate the relationships already established with these various Federal agencies and entities as the present maglev technology assessment phase moves forward into further research, development, and design.

SECTION 4.—COOPERATIVE AGREEMENTS AND FUNDING AGREEMENTS

This section would amend the 1965 Act by adding a new section 4. Subsection (a) of this new section would give the Secretary authority to enter into cooperative research and development agreements (CRADAs) (as defined under section 12 of the Stevenson-Wydler Technology Innovation Act of 1980), and one or more funding agreements (as defined by section 201(b) of title 35, U.S. Code), with U.S. companies. These CRADAs and funding agreements would be entered into in order to conduct research to overcome technical and other barriers to the development and construction of high-speed rail systems and to transfer that research and basic generic technologies to industry. The purpose of these agreements would be to help stimulate a viable commercial high-speed rail transportation industry within the United States.

The Committee envisions that the Secretary would determine, with assistance from the director of any Government-operated Federal laboratory, which CRADAs to enter into with other Federal agencies; units of State and local government; industrial organizations (including corporations, partnerships, limited partnerships, and industrial development organizations); public and private foun-

dations; nonprofit organizations (including universities); or other persons (including licensees of inventions owned by the Federal agency). The DOT's Systems Center in Cambridge, MA, is a Federal laboratory with the demonstrated capability of performing research and development activities pursuant to this legislation. It is, however, the intent of the Committee to provide the Secretary with sufficient flexibility to contract with any Federal laboratory as the Secretary deems appropriate.

In addition to the CRADA mechanism, the committee authorizes the Secretary to enter into one or more funding agreements which do not require the participation of a Federal laboratory. Under a "funding agreement," the non-Federal recipient of Federal funds automatically gets the right to ownership of any patentable inventions resulting from research conducted under the agreement, whereas under a CRADA, the disposition of rights is negotiated, and the Federal laboratory may agree to give up its ownership rights, or to grant licensing rights in advance.

The intent of the Committee is to provide the Secretary with clear authority to commit Federal funds to maglev and other high-speed rail research and development both within and outside of the Federal laboratory environment. The Committee believes that the use of funding agreements would provide additional incentives for private industry to participate in the research and development process.

Subsection (b) of new section 4 would allow the Secretary to provide up to 80 percent of the cost of any project under an agreement reached pursuant to subsection (a). This subsection requires that at least 5 percent of the non-Federal entity's share of any project must be paid in cash.

Subsection (c) of new section 4 specifies that the research, development, or utilization of any technology that results from a cooperative agreement, as detailed in subsection (a), would be subject to the provisions of the Stevenson-Wydler Technology Innovation Act of 1980. Also subject to that Act would be the terms by which this technology may be licensed and any resulting royalties distributed.

Subsection (d) of new section 4 would provide that the research, development, or utilization of any technology resulting from a funding agreement, including licensing and ownership rights, would be subject to chapter 18 of title 35, U.S. Code.

Subsection (e) of new section 4 requires the Secretary to provide reports to Congress at the end of FY 1993 and FY 1996 on research and technology transfer activities conducted as a result of subsection (a).

SECTION 5.—AUTHORIZATION OF APPROPRIATIONS

This section amends section 11 of the 1965 Act to authorize $25 million in FY 1992, $40 million in FY 1993, $50 million in FY 1994, $50 million in FY 1995, and $30 million in FY 1996 to carry out the 1965 Act as amended by this legislation. No more than 40 percent of the authorization for FY 1992, and 30 percent of each of the authorizations for FY 1993 through FY 1996, shall be available for research and development. The balance of the authorizations for each

year shall be available for technology demonstration and implementation.

SECTION 6.—COMMERCIAL FEASIBILITY STUDY

This section amends section 13 of the 1965 Act to require the Secretary to complete and submit to Congress, within 18 months of the date of enactment of this legislation, a study of the commercial feasibility of constructing one or more high-speed rail transportation systems in the United States. This study shall consist of: (1) an economic and financial analysis; (2) a technical assessment; and (3) recommendations for model legislation for State and local governments to facilitate construction of high-speed rail transportation systems.

SECTION 7.—HIGH-SPEED RAIL TECHNOLOGY DEVELOPMENT

This section amends the 1965 Act by adding a new section 14 to require the Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the EPA Administrator, and the Assistant Secretary of the Army for Civil Works, to develop between two and four detailed designs for high-speed rail system technological concepts which have the potential for successful application in the United States and the potential for significant participation by U.S. industries in the development and manufacture of such technologies. Multiple grants and contracts may be awarded for appropriate activities, including development, testing, and evaluation of scale models of systems and full-scale prototypes of major system subcomponents. The Secretary shall submit to Congress by February 1, 1996, a report which identifies which detailed designs, if any, warrant development as a full-scale prototype.

The Committee intends that the Secretary should consider, in administering grants and contracts under this section, applications from entities proposing near-term implementation of presently existing high-speed rail technologies. Universal data and experience from the design, construction, and operation of these systems, including but not limited to guideway construction and other civil engineering considerations, implementation of communications, signaling and control systems, vehicle design aspects, and intermodal system integration, would be appropriate in ensuring the broadest possible basis for the Secretary's recommendations under this section.

SECTION 8.—NATIONAL HIGH-SPEED-RAIL TRANSPORTATION POLICY

This section amends the 1965 Act by adding a new section 15 instructing the Secretary to establish, within 6 months after the submission of the commercial feasibility study described in section 7 of the reported bill, a National High-Speed Rail Transportation Policy. This policy shall include provisions to: (1) promote the design, construction, and operation of high-speed rail transportation systems in the United States; (2) determine whether the various competing high-speed rail technologies can be integrated effectively into a national network; (3) offer a strategy for prioritizing the markets and corridors in which the construction of high-speed rail transportation systems should be encouraged; and (4) include

steps to promote American competitiveness in the market for high-speed rail technologies.

The Committee believes that Federal guidance is necessary to ensure that the various regional public and private sector initiatives to implement high-speed rail technologies continue to progress, and that these systems are integrated effectively both with each other and with all other modes of the Nation's transportation system. By adopting a comprehensive Federal policy statement, the Secretary can best determine where, when, and how Federal involvement in support of these activities would be most appropriate in alleviating congestion and assuring the Nation's future competitiveness.

SECTION 9.—HIGH-SPEED GROUND TRANSPORTATION OFFICE

This section adds a new subsection (e) to section 103 of title 49, U.S. Code, to establish a High-Speed Ground Transportation Office within the FRA. This Office would coordinate Federal activities related to high-speed rail transportation, including research and development and technology demonstration and implementation. The Office also would carry out the FRA's mandate to ensure the safety of high-speed rail systems pursuant to the 1988 Safety Act, and recommend such administrative and legislative action as may be necessary to facilitate the advancement and implementation of high-speed rail transportation systems.

SECTION 10.—DEFINITION

This section clarifies, for the purposes of this legislation, that the term "High-Speed Ground Transportation Act" refers to the Act entitled "An Act to authorize the Secretary of Commerce to undertake research and development in high-speed ground transportation, and for other purposes," which was approved September 30, 1965.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

HIGH-SPEED GROUND TRANSPORTATION ACT

First Section of that Act

That, *(a)* consisted with the objective of promoting a safe, adequate, economical, and efficient national transportation system, the Secretary of Transportation (hereafter in this Act referred to as the "Secretary") is authorized to undertake research and development in high-speed ground transportation and door-to-door ground transportation, including, but not limited to, components such as materials, aerodynamics, vehicle propulsion, vehicle control, communications, and guideways.

(b) Pursuant to the authority under subsection (a) to undertake research and development in high-speed ground transportation, the

Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the Administrator of the Environmental Protection Agency, the Assistant Secretary of the Army for Public Works, and the heads of other interested agencies, shall lead and coordinate Federal efforts in the development of magnetic levitation (maglev) transportation technologies and shall foster the implementation of magnetic levitation and other high-speed rail transportation systems as alternatives to existing transportation systems.

Section 3 of that Act

SEC. 3. * * *

SEC. 4. (a) In carrying out the responsibilities of the Secretary under the first section, the Secretary is authorized to enter into one or more cooperative research and development agreements (as defined by section 12 of the Stevenson-Wydler Technology Innovation Act of 1980, 15 U.S.C. 3710a), and one or more funding agreements (as defined by section 201(b) of title 35, United States Code), with United States companies for the purpose of—

(1) conducting research to overcome technical and other barriers to the development and construction of practical high-speed rail transportation systems and to help advance the basic generic technologies needed for these systems; and

(2) transferring that research and basic generic technologies to industry in order to help create a viable commercial high-speed rail transportation industry within the United States.

(b) In a cooperative agreement or funding agreement under subsection (a), the Secretary may agree to provide not more than 80 percent of the cost of any project, including any technology demonstration project, under the agreement. Not less than 5 percent of the non-Federal entity's share of the cost of any such project shall be paid in cash.

(c) The research, development, or utilization of any technology pursuant to a cooperative agreement under subsection (a), including the terms under which such technology may be licensed and the resulting royalties may be distributed, shall be subject to the provisions of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.).

(d) The research, development, or utilization of any technology pursuant to a funding agreement under subsection (a), including the determination of all licensing and ownership rights, shall be subject to the provisions of chapter 18 of title 35, United States Code.

(e) At the conclusion of fiscal year 1993 and again at the conclusion of fiscal year 1996, the Secretary shall submit reports to appropriate committees of the Senate and House of Representatives regarding research and technology transfer activities conducted pursuant to the authorization contained in subsection (a).

Section 11 of that Act

[SEC. 11. There are hereby authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, but not to exceed $20,000,000 for the fiscal year ending June 30, 1966; $35,000,000 for the fiscal year ending June 30, 1967; $35,000,000 for the fiscal year ending June 30, 1968; $16,200,000 for

the fiscal year ending June 30, 1969; $21,200,000 for the fiscal year ending June 30, 1970; and $21,700,000 for the fiscal year ending June 30, 1971. Such sums shall remain available until expended.]

SEC. 11. (a) There are authorized to be appropriated to the Secretary $25,000,000 for fiscal year 1992, $40,000,000 for fiscal year 1993, $50,000,000 for fiscal year 1994, $60,000,000 for fiscal year 1995, and $30,000,000 for fiscal year 1996, to carry out the provisions of this Act.

(b) Of the sums authorized to be appropriated under subsection (a)—

(1) no more than 40 percent for fiscal year 1992, and no more than 30 percent for each of the fiscal years 1993, 1994, 1995, and 1996, shall be available for research and development; and

(2) the balance for each of the fiscal years 1993, 1994, 1995, and 1966 shall be available for technology demonstration and implementation.

Section 13 of that Act

[SEC. 13. (a) The Secretary shall make an investigation and study, for the purpose of determining the social advisability, technical feasibility, and economic practicability, of a high-speed ground transportation system between the cities of Tijuana in the State of Baja California, Mexico, and Vancouver in the Province of British Columbia, Canada, by way of the cities of Seattle in the State of Washington, Portland in the State of Oregon, and Sacramento, San Francisco, Fresno, Los Angeles, and San Diego in the State of California. In carrying out such investigation and study the Secretary shall consider—

[(1) the various means of providing such transportation, including both existing modes and those under development, such as the tracked levitation vehicle;

[(2) the cost of establishing and operating such a system, including any acquisition of necessary rights-of-way;

[(3) the environmental impact of such a system, including the future environmental impact from air and other transportation modes if such a system is not established;

[(4) the factors which would determine the future adequacy and commercial success of any such system, including the speed at which it would operate, the quality of service which could be offered, its cost to potential users, its convenience to potential users, and its ability to expand to meet projected increases in demand;

[(5) the efficiency of energy utilization and impact on energy resources of such a system, including the future impact of existing transportation systems on energy resources if such a system is not established;

[(6) the ability of such a system to be integrated with other local and intrastate transportation systems, both existing and planned, in order to create balanced and comprehensive transit systems;

[(7) coordination with other studies undertaken on the State and local level;

[(8) the impact of the design and location of transportation lines in creating desirable patterns of population distribution and growth; and

[(9) such other matters as he deems appropriate.

[(b) In carrying out any investigation and study pursuant to this section, the Secretary shall consult with, and give consideration to the views of, the Civil Aeronautics Board, the Interstate Commerce Commission, the National Railroad Passenger Corporation, the Corps of Engineers, and regional, State, and local transportation planning agencies. The Secretary may, for the purpose of carrying out such investigation and study, enter into contracts and other agreements with public or private agencies, institutions, organizations, corporations on individuals, without regard to sections 3648 and 3709 of the Revised Statutes of the United States (31 U.S.C. 529; 41 U.S.C. 5).

[(c) The Secretary shall report the results of the study and investigation made pursuant to this section, together with his recommendations, to the Congress and the President no later than January 30, 1977. The Secretary shall submit an interim report to the Congress on January 30, 1976.

[(d) There are authorized to be appropriated not to exceed $8,000,000 to carry out the provisions of this section.]

SEC. 13. (a) Within 18 months after the date of enactment of the High-Speed Rail Transportation Act of 1991, the Secretary shall complete and submit to appropriate committees of the Senate and House of Representatives a study of the commercial feasibility of constructing one or more high-speed rail transportation systems in the United States. Such study shall consist of—

(1) an economic and financial analysis;

(2) a technical assessment; and

(3) recommendations for model legislation for State and local governments of facilitate construction of high-speed rail transportation systems.

(b) The economic and financial analysis referred to in subsection (a)(1) shall include—

(1) an examination of the potential market for a nationwide high-speed rail transportation network;

(2) an examination of the potential markets for short-haul high-speed rail transportation systems and for intercity and long-haul high-speed rail transportation systems, including an assessment of—

(A) the current transportation practices and trends in each market; and

(B) the extent to which high-speed rail transportation systems would relieve the current or anticipated congestion on other modes of transportation;

(3) projections of the costs of designing, constructing, and operation high-speed rail transportation systems, the extent to which such systems can recover their costs (including capital costs), and the alternative methods available for private and public financing;

(4) the availability of rights-of-way to serve each market, including the extent to which average and maximum speeds would be limited by the curvature of existing rights-of-way and

the prospect of increasing speeds through the acquisition of additional rights-of-way without significant amounts of relocation of residential, commercial, or industrial facilities;

(5) a comparison of the projected costs of the various competing high-speed rail transportation technologies;

(6) recommendations for funding mechanisms, tax incentives, liability provisions, and changes in statutes and regulations necessary to facilitate the development of individual high-speed rail transportation systems and the completion of a nationwide high-speed rail transportation network;

(7) an examination of the effect of the construction and operation of high-speed rail transportation systems on regional employment and economic growth;

(8) recommendations for the roles appropriate for local, regional, and State governments to facilitate construction of high-speed rail transportation systems, including the roles of regional economic development authorities;

(9) an assessment of the potential for a high-speed rail transportation technology export market;

(10) recommendations regarding the coordination and centralization of Federal efforts relating to high-speed rail transportation;

(11) an examination of the role of the National Railroad Passenger Corporation in the development and operation of high-speed rail transportation systems; and

(12) any other economic or financial analyses the Secretary considers important for carrying out this Act.

(c) The technical assessment referred to in subsection (a)(2) shall include—

(1) an examination of the various technologies developed for use in the transportation of passengers by high-speed rail, including a comparison of the safety (including dangers associated with grade crossings), energy efficiency, operational efficiencies, and environmental impacts of each system;

(2) an identification of those system concepts that might be appropriate for further development and implementation of magnetically levitated high-speed rail technology;

(3) an examination of the potential of United States industries to participate in the development and manufacture of high-speed rail transportation systems, including the potential to "leapfrog", or exceed, existing high-speed rail transportation technologies and produce a superior domestically designed product;

(4) an examination of the work being done to establish safety standards for high-speed rail transportation as a result of the enactment of section 7 of the Rail Safety Improvement Act of 1988;

(5) an examination of the need to establish appropriate technological, quality, and environmental standards for high-speed rail transportation systems;

(6) an examination of the significant unresolved technical issues surrounding the design, engineering, construction, and operation of high-speed rail transportation systems, including the potential for the use of existing rights-of-way;

(7) an examination of the effects on air quality, energy consumption, noise, land use, health, and safety as a result of the decreases in traffic volume on other modes of transportation that are expected to result from the full-scale development of high-speed rail transportation systems; and

(8) any other technical assessments the Secretary considers important for carrying out this Act.

SEC. 14. (a)(1) The Secretary, in consultation with the Secretaries of Commerce, Energy, and Defense, the Administrator of the Environmental Protection Agency, and the Assistant Secretary of the Army for Civil Works, shall develop detailed designs for those high-speed rail system technological concepts that, in the opinion of the Secretary, have the potential for successful application in the United States and have the potential for significant participation by United States industries in the development and manufacture of such technology, and that otherwise warrant further development.

(2) In carrying out paragraph (1), the Secretary shall develop the detailed designs of not less than two, nor more than four, of the system concepts identified under section 13(c)(2) that, in the opinion of the Secretary, have demonstrated the greatest technical merit and greatest likelihood for resolving any outstanding technical issues, including the development of a full-scale prototype.

(b)(1) The Secretary may award multiple grants or contracts for the development of the designs pursuant to subsection (a).

(2) In awarding such grants and contracts, the Secretary shall consider such factors as the proposed design's likely ability to meet existing and future domestic transportation requirements; probable initial system capital costs; probable long-term system operating and maintenance costs; safety; environmental effects; the proposed design's likely ability to achieve sustained high speeds; the proposed design's likely ability to utilize available rights-of-way; the proposed design's potential to contribute to technological advancement and innovation; the potential awardee's resources, capabilities, and history of successfully designing and developing systems of similar complexity; and the extent to which the potential awardee would share in the cost of the development of such a design.

(3) Grants for the development of such designs shall be for activities the Secretary deems appropriate and may include, but not be limited to, the development, testing, and evaluation of scale models of systems and the development, testing, and evaluation of full scale prototypes of major system subcomponents.

(4) No trade secrets or commercial or financial information that is privileged or confidential under the meaning of section 552(b)(4) of title 5, United States Code, which is obtained from a United States business, research, or education entity as a result of activities under this section shall be disclosed.

(5) The research, development, and use of any technology developed pursuant to an agreement reached pursuant to this section, including the terms under which any technology may be licensed and the resulting royalties distributed, shall be subject to the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.). In addition, the Secretary may require any grant recipient to assure that research and development shall be performed substantially in the United States, and that the products embodying the inventions

made under any agreement pursuant to this section or produced through the use of such inventions shall be manufactured substantially in the United States.

(c)(1) The Secretary shall provide periodic reports to the appropriate committees of the Congress on the progress of activities performed pursuant to this section.

(2) Not later than February 1, 1996, the Secretary shall transmit to the appropriate committees of the Congress a report that identifies which detailed designs, if any, warrant development as a full-scale prototype.

(3) The report required by paragraph (2) shall include a detailed plan, schedule, and estimate for the development of any full-scale prototype as well as recommendations for mechanisms to fund the development of such a prototype in a manner that ensures that the maximum practicable amount of funding comes from non-Federal sources.

SEC. 15. (a) Within 6 months after the submission of the study required by section 13, the Secretary shall establish the National High-Speed Rail Transportation Policy (hereafter in this section referred to as the "Policy").

(b) The Policy shall include—

(1) provisions to promote the design, construction, and operation of high-speed rail transportation systems in the United States;

(2) a determination whether the various competing high-speed rail transportation technologies can be effectively integrated into a national network and, if not, whether one or more such technologies should receive preferential encouragement from the Federal Government to enable the development of such a national network;

(3) a strategy for prioritizing the markets and corridors in which the construction of high-speed rail transportation systems should be encouraged; and

(4) provisions designed to promote American competitiveness in the market for high-speed rail transportation technologies.

(c) The Secretary shall solicit comments from the public in the development of the Policy and may consult with other Federal agencies as appropriate in drafting the Policy.

TITLE 49, UNITED STATES CODE

SECTION 103 OF THAT TITLE

§ 103. Federal Railroad Administration

(a) through (d) * * *

(e) There is established within the Administration the High-Speed Ground Transportation Office, which shall be headed by a Director, who shall report to the Administrator. It shall be the function of the Office, in consultation with the Army Corps of Engineers, the Federal Highway Administration, and the Environmental Protection Agency, to—

(1) coordinate Federal activities related to high-speed rail transportation, including research and development and technology demonstration and implementation;

(2) carry out the Administration's mandate to ensure the safety of high-speed rail transportation systems under the Rail Safety Improvement Act of 1988; and

(3) on an annual basis make recommendations for such legislative or administrative action as may be necessary to facilitate the advancement and implementation of high-speed rail transportation systems.

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